



## A National, Global Leader in the Use of Precision Angiography

**S**t. Francis Hospital is a national and global leader in the use of optical coherence tomography (OCT). This innovative technology, also called precision angiography, is currently used by less than 10% of physicians at heart institutions; by contrast, St. Francis is the nation's number-one user of OCT, according to Richard A. Shlofmitz, M.D., Chairman of Cardiology at St. Francis.

Good Samaritan Hospital, a CHS sister hospital of St. Francis, is also a leading user of OCT. In 2017, about 75% of interventions at St. Francis involved OCT or intravascular ultrasound (IVUS); this year, that percentage will be closer to 95%. Hospital leaders have hired imaging experts to help all physicians become more comfortable with this approach. "In 2018, we look forward to being the only hospital in the world where if you have an intervention, every doctor will be trained in precision angiography," Dr. Shlofmitz said. "It's a remarkable step forward."

Dr. Shlofmitz has pushed for increased usage of this technology for several reasons. First, the use of OCT technology can take the mystery out of a two-dimensional angiogram, where physicians cannot achieve a full view of the arteries. "The OCT also is 100% accurate at assessing calcium, something that is not possible with a traditional angiogram," Dr. Shlofmitz said. Precision angiography also helps guide physicians as to where to place



**Taking the Lead in OCT:** Dr. Richard Shlofmitz is expanding the use of precision angiography at St. Francis Hospital and teaching other interventional cardiologists throughout the country how to use it.

stents. "When precision angiography is performed, fewer stents are used in a patient because there is increased accuracy," he adds.

### Increasing education

Greater education about the value of precision angiography will further promote its value, Dr. Shlofmitz believes. Toward this end, some of the cath labs at St. Francis have been equipped with video cameras so that physicians around the world can view live transmissions. These sessions take place once a month.

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## U.S. News & World Report Ranks St. Francis One of the Best Hospitals in the Nation for Cardiac Care—Eleventh Year in a Row



For the eleventh consecutive year, St. Francis Hospital, The Heart Center® has been recognized by *U.S. News & World Report* as one of the top 50 hospitals in the nation for Cardiology & Heart Surgery. The Hospital was also rated among the best in the country for Gastroenterology & GI Surgery—receiving the only national recognition in adult specialties for any hospital on Long Island. St. Francis was rated

#5 in New York State and #6 in the NY Metro area. It was ranked the best hospital on Long Island for the fifth year in a row.

St. Francis was also recognized by *U.S. News* as high performing regionally in four

adult specialties: Geriatrics; Neurology & Neurosurgery; Orthopedics; and Pulmonology. Along with the national and regional ratings, the Hospital was ranked high performing in eight common adult procedures and conditions: abdominal aortic aneurysm repair, aortic valve surgery, heart bypass surgery, heart failure, colon cancer surgery, COPD, hip replacement, and lung cancer surgery – the most for any hospital on Long Island.

More than 4,500 hospitals nationwide were analyzed for *U.S. News'* 28th annual Best Hospitals rankings; of that number only 152 hospitals were nationally ranked in at least one specialty. Hospitals were compared in 25 specialties, procedures, and conditions. According to *U.S. News*, the rankings are designed to help patients make more informed health care decisions. The methodologies include objective measures such as patient survival, rates of infection, and adequacy of nursing staff.

## Nationwide trial targets better treatment for persistent atrial fibrillation

**S**t. Francis is participating in a large clinical trial focused on whether a combined treatment for atrial fibrillation may be more effective than pulmonary vein isolation (PVI) alone.

“We are very excited about participating in this study,” said Joseph Levine, M.D., Director of Electrophysiology at St. Francis and principal investigator. “It may offer new hope for patients who’ve undergone repeated ablations, but whose atrial fibrillation persists.”

Called the aMAZE Trial, the study will compare if PVI and closure of the left atrial appendage using the LARIAT procedure may treat atrial fibrillation better than PVI only. The LARIAT procedure involves placement of a suture over the left atrial appendage.

“It’s a way of isolating the left atrial appendage so that any electrical stimulation arising in the appendage is no longer able to foster afib,” said George Petrossian, M.D., Director of Interventional Cardiovascular Procedures and co-investigator.

The LARIAT is approved by the U.S. Food and Drug Administration for use



Joseph Levine, M.D.



George Petrossian, M.D.

in general surgery to close soft tissue, but it has not been studied extensively to close the left atrial appendage in afib patients who are receiving catheter ablation, according to the trial website.

A total of 650 patients from 65 sites are expected to participate in the trial, including patients from St. Francis. Patients will be randomized to have PVI alone or the LARIAT procedure followed by PVI about a month later. Although results from the trial are not expected for at least a year, Dr.

Petrossian is hopeful that the outcomes will

offer some promise to patients with

persistent afib. “There could potentially be combined procedures to improve efficacy and help patients who are symptomatic to have less palpitations,” he said.

The full name of the trial is aMAZE Trial: Left Atrial Appendage Ligation with the LARIAT Suture Delivery System as Adjunctive Therapy to Pulmonary Vein Isolation (PVI) for Persistent or Longstanding Persistent Atrial Fibrillation.

## Clinical Trials Enrolling in 2018

Expanding clinical trials designed to evaluate novel treatments of mitral regurgitation are underway at St. Francis Hospital. These trials are aimed at either replacement or repair of the mitral valve. The structural heart disease team led by [George Petrossian, M.D.](#), and [Newell Robinson, M.D.](#), is investigating mitral valve replacement via a catheter-based procedure, possibly avoiding the need for open heart surgery. In addition to the mitral valve, the team is also actively engaged in the research of transcatheter aortic valve replacement (TAVR).

Intracoronary imaging continues to be the core of interventional research led by [Richard Shlofmitz, M.D.](#) The objective is to understand the impact of imaging-guided PCI (OCT-optical coherence imaging and IVUS) on PCI procedural and clinical outcomes. Dr. Shlofmitz is also leading an investigation of complex calcified lesion preparation using orbital atherectomy prior to stenting, combined with intravascular imaging (OCT) for the evaluation of procedural success and clinical outcomes.

[Allen Jeremias, M.D.](#), a leading expert in FFR

(fractional flow reserve), is conducting multiple studies investigating FFR and iFR in their predictive value of future cardiovascular events. In addition, he is also assessing the value of derived FFR using computational flow dynamics based on angiographic images.

In the area of heart failure, [Rita Jermyn, M.D.](#), Director of the Center for Advanced Therapeutics, is involved in multicenter drug and device trials aimed at the optimization of treatment of heart failure, reduction in heart failure hospitalization, and reduction in cardiovascular mortality. Dr. Jermyn is also a renowned expert in CardioMEMS, a system for wirelessly measuring and monitoring pulmonary artery pressure and heart rate. Her research is focused on improving the quality of life for heart failure patients.

The Cardiac Imaging Department, led by [Jane Cao, M.D.](#), has a large number of original research protocols encompassing echocardiography, nuclear imaging, cardiac CT, and MRI technologies. The accessibility of multi-modality imaging creates a unique opportunity to investigate the relationship of myocardial tissue prop-

erty and myocardial mechanical performance, led by Dr. Cao and [Lin Wang, M.D.](#) A broad interest in qualitative and quantitative myocardial perfusion research has led to investigations using MRI, CT, echocardiography, and PET imaging led by [Madhavi Kadiyala, M.D.](#), [Timothy Christian, M.D.](#), [Aasha Gopal, M.D.](#), and [Andrew Van Tosh, M.D.](#) [Eddy Barasch, M.D.](#), an expert in aortic stenosis research, continues to evaluate physiologic insights and clinical outcomes associated with aortic stenosis. Artificial intelligence is an important area of leading edge research in cardiac imaging. Led by senior scientist [James Goldfarb, Ph.D.](#), there is exciting development of artificial intelligence in large scale cardiac imaging analysis. Another senior scientist [Yulee Li, Ph.D.](#) and his team are working on an NIH funded study to develop techniques to increase the speed of cardiac imaging. Dr. Cao is collaborating with engineers to develop 3D printing to investigate the role of personalized planning in complex cardiac device deployment.

**Please call (516) 562-6790 for more information about any of these trials.**

# Technology pushes continued growth and improvements in LVAD, CHF patients

**T**he congestive heart failure device program at St Francis Hospital has continued to grow. "More patients have received a left ventricular assist device (LVAD) as a bridge to transplantation or as destination therapy this year than any other year since this program became Joint Commission-certified in 2016," said Edward Lundy, M.D., Ph.D., Surgical Director of the Left Ventricular Assist Device Program. "The results have been fantastic," Dr. Lundy said.

Patients receiving LVAD have a dramatic im-

provement in their quality of life. "These are critically ill heart failure patients – each has made an improvement in their activities of daily life," Dr. Lundy said.

St. Francis has also purchased a new FDA-approved device called the HeartMate3 (HM3). This device is only approved for bridge to transplant. "The Momentum Trial has shown a zero percent risk of thrombosis in this pump [HM3]," Dr. Lundy explained.

St. Francis also uses more sophisticated options

for patients in cardiogenic shock. With the use of percutaneous pumps and surgically placed extracorporeal membrane oxygenation (ECMO), cardiothoracic surgeons can help support patients in cardiogenic shock. "Impella is only a temporary device, but the few days it is used can be life-saving," Dr. Lundy said. St. Francis will soon take part in a national study with Impella.

In the realm of congestive heart failure, St. Francis Hospital continues to grow its use of the CardioMEMs device. This is a monitoring device that measures pressure inside the lungs in Class 3 heart failure patients. "The CardioMEMs device is especially helpful for patients who have been in the hospital within the previous 12 months to prevent re-admission for congestive heart failure," said Rita Jermyn, M.D., Director of the Heart Failure Program. CardioMEMs enables quick and frequent monitoring of pulmonary pressures, which often helps improve dietary and medication adherence. More frequent monitoring can ultimately lead to tailored guidance and a reduction of hospital readmissions.

"Almost 100 patients from St. Francis have been implanted with CardioMEMs", Dr. Jermyn said.

St. Francis will soon take part in a clinical trial called GUIDE HF that will study the use of CardioMEMs in Class 2 and 3 heart failure patients.

Edward F. Lundy, M.D., Ph.D., Surgical Director (left).  
Rita A. Jermyn, M.D., Medical Director (right).



## Heart Valve Center at St. Francis Continues Expansion

The John Brancaccio Heart Valve Center at St. Francis continues to expand and reach a broader range of patients.

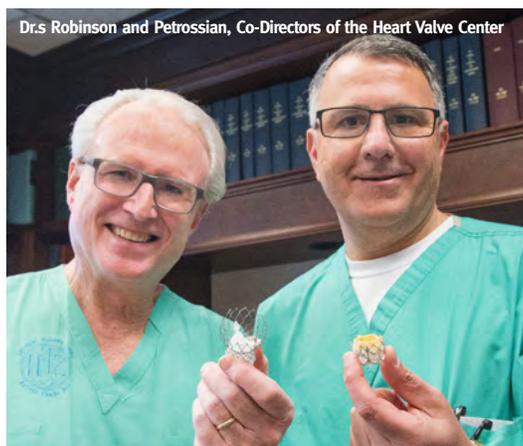
The center, which opened in early 2014, gives patients a central location to have testing and meet with an interventional cardiologist and a cardiac surgeon to learn about therapeutic options. "This has enabled patients to reduce the time from work-up to treatment by two to three weeks," said Newell Robinson, M.D. (left), Chairman of Cardiothoracic and Vascular Surgery and Co-Director of the Heart Valve Center.

The center has been active in transcatheter aortic valve replacement (TAVR) and has recently expanded to include new options for mitral valve repair and replacement.

"As the indications for TAVR have expanded, we've witnessed growth in the aortic valve arena. Now there is also growth in the mitral transcatheter arena," said George Petrossian, M.D. (right), Director of Interventional Cardiovascular Procedures and Heart Valve Center Co-Director.

"These two areas of growth are exciting and are fueling the growth of the Heart Valve Center."

The Heart Valve Center at St. Francis is also one of the largest enrollers nationwide in a Medtronic-sponsored trial comparing low-risk patients who are randomized to have TAVR or conventional open-heart surgery. The center has enrolled 41 patients to date.



The team at the Heart Valve Center is using the Sentinel Cerebral Protection Device, which helps prevent thrombus or debris that could travel to the brain and cause a stroke, said Kristin Pasquarello, PA, Administrative Director of the Heart Valve Center.

St. Francis has opened a second Heart Valve Center at Good Samaritan Hospital, a CHS sister hospital. "This expands the reach of the Heart Valve Center throughout Long Island," Pasquarello said. Patients will eventually have a fully supported team for procedures at the second location.

St. Francis Hospital

## CARDIOVASCULAR Report

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## Connect with St. Francis

For physician referral, please call 1-888-HEARTNY (432-7869). For information about cardiovascular services at St. Francis Hospital, call (516) 562-6725.

## Leading St. Francis Cardiologists Participate in International Educational Workshop



Allen Jeremias, M.D., Director of Interventional Cardiology Research and Associate Director of the Cardiac Cath Lab at St. Francis, co-directed a deep-dive course on “Optimizing PCI in Complex Procedures.” The intensive, 1.5 day workshop in Manhattan, sponsored by Philips/Volcano, featured lectures, case examples, and live case transmissions. The faculty also included St. Francis interventional cardiologists Richard Shlofmitz, M.D., Thomas Pappas, M.D., and Theofanis Tsiamtsiouris, M.D.

## Cardiac Imaging Advances at St. Francis



St. Francis continues to lead the way in cardiac imaging advances in three major areas, according to Jane Cao, M.D., Director of Research and Director of Cardiac Imaging.

**Precision medicine**-St. Francis cardiac imaging is moving towards more quantitative evaluation. For coronary CT, the addition of FFRct has improved the diagnostic accuracy, Dr. Cao says. Cardiac MRI is focused on advanced quantitation for heart muscle and for valvular disease. Cardiac PET now provides quantitative coronary flow and flow reserve. Echocardiogram is moving toward 3D quantitation for cardiac function and valvular regurgitation.

**Artificial intelligence (AI)**- AI is a rapidly evolving area both at St. Francis and around the globe. “The use of AI to process cardiac images will greatly improve efficiency and precision,” Dr. Cao says.

**3D printing**- St. Francis recently started a 3D printing program to print out heart structures for use in preparation for transcatheter valvular intervention.

## St. Francis Hospital Awarded Advanced Certification as Primary Stroke Center

St. Francis Hospital has earned The Joint Commission’s Gold Seal of Approval® and the American Heart Association/American Stroke Association’s Heart-Check mark for Advanced Certification of Primary Stroke Centers. The Gold Seal of Approval® and the Heart-Check mark represent symbols of quality from their respective organizations.

The Hospital underwent a rigorous onsite review to achieve the advanced certification. Joint Commission experts evaluated compliance with stroke-related standards and requirements, including program management, the delivery of clinical care, and performance improvement.

Established in 2003, Advanced Certification for Primary Stroke Centers is awarded for a two-year period to Joint Commission-accredited acute care hospitals. The certification was derived from the Brain



Attack Coalition’s “Recommendations for the Establishment of Primary Stroke Centers” (*JAMA*, 2000) and the “Revised and Updated Recommendations for the Establishment of Primary Stroke Centers” (*Stroke*, 2011).

Stroke is the number four cause of death and a leading cause of adult disability in the United States, according to the American Heart Association/American Stroke Association. On average, someone suffers a stroke every 40 seconds; someone dies of a stroke every four minutes; and 795,000 people suffer a new or recurrent stroke each year.

## Precision Angiography *(Continued from page 1)*

Dr. Shlofmitz is also co-directing the conference, **Intravascular Imaging and Coronary Physiology 2018**, to be held May 4 and 5 in New York City. This 1.5 day event includes renowned faculty from the U.S. and around the world. Attendees will be able to observe live cases from St. Francis Hospital. The workshop is sponsored by St. Francis and partially funded through educational grants from commercial supporters.

Additionally, Dr. Shlofmitz is on the steering committee for the ILUMIEN IV: OPTIMIZE PCI trial. The new study follows the 2016 ILUMIEN III trial, which found that OCT was safe and resulted in a similar-sized stent area compared with IVUS.